WHAT IS CLAIMED IS:

1. A system for modeling a circuit breaker assembly and its components, the system comprising:

a computer generated and interactive system model, the system model comprising hierarchically arranged sub-models, each sub-model representing a different circuit breaker function;

a first pin for passing simulated load current to the system model; and,

a second pin for passing simulated load current from the system model.

2. The system of claim 1 wherein the sub-models includes at least one of a bimetal trip unit model, a magnetic trip unit model, a latch mechanism model, an operating mechanism model, and a solenoid linkage model.

3. The system of claim 2 wherein the sub-models includes the bimetal trip unit model, the bimetal trip unit model modeling behavior of a bimetal strip within the circuit breaker assembly.

4. The system of claim 3 further comprising a bimetal heating model and a bimetal deflection model accessible through the bimetal trip unit model.

5. The system of claim 4 wherein the bimetal heating model generates temperature rise and inputs temperature rise to the bimetal deflection model.

6. The system of claim 5 wherein the bimetal deflection model calculates force of the bimetal strip and applies the force to spring rate of the bimetal strip.

7. The system of claim 3 wherein the bimetal trip unit model determines temperature of the bimetal strip and calculates deflection and force exerted on the bimetal strip.

8. The system of claim 3 wherein the bimetal trip unit model includes a translational stop for modeling a gap located between the bimetal strip and a latch of the circuit breaker assembly.

9. The system of claim 2 wherein the sub-models includes the magnetic trip unit model, the magnetic trip unit model modeling interaction between a latch and a magnet within the circuit breaker assembly.

10. The system of claim 9 wherein the magnetic trip unit model uses the load current from the first pin and the second pin to excite a winding that generates a flux in a magnetic circuit within the circuit breaker assembly.

11. The system of claim 9 wherein the latch and the magnet are pivotal together.

12. The system of claim 9 wherein the sub-models includes the latch mechanism model, the latch mechanism model modeling behavior of a latch within the circuit breaker assembly.

13. The system of claim 12 wherein the latch is acted upon by the bimetal trip unit model and the magnetic trip unit model.

14. The system of claim 13 wherein the latch is further acted upon by an electronic trip unit within the circuit breaker assembly.

15. The system of claim 12 wherein the latch includes a pivot end, the pivot end adjacent to a magnet within the circuit breaker assembly.

16. The system of claim 15 wherein the pivot end is pushed towards the magnet by spring force.

17. The system of claim 15 wherein the latch includes an opposing end opposite the pivot end, the opposing end including a point, wherein position of the point is modeled within a latch position model.

18. The system of claim 2 wherein the sub-models includes the operating mechanism model, the operating mechanism model modeling interaction between a cradle, a contact blade, and a handle of a circuit breaker assembly.

19. The system of claim 18 wherein the cradle pulls a contact located on the contact blade open during a trip event.

20. The system of claim 18 wherein the cradle and the contact blade are connected by a spring coupling.

21. The system of claim 20 further comprising a spring coupling model within the operating mechanism model.

22. The system of claim 21 wherein the spring coupling model includes calculations for determining rectangular coordinates of ends of the spring coupling.

23. The system of claim 22 wherein the spring coupling model further includes an equation for calculating spring torque to the cradle and contact blade.

24. The system of claim 2 wherein the sub-models includes the solenoid linkage model, the solenoid linkage model modeling interactions between a solenoid lever and a latch lever of a circuit breaker assembly.

25. The system of claim 24 further comprising a third pin for passing solenoid force to the system model and to the solenoid linkage model.

26. The system of claim 1 further comprising simulation parameters representing each component.

27. The system of claim 26 wherein a change in simulation parameters within the sub-models updates behavior of the system model.

28. The system of claim 27 wherein simulation parameters includes component dimensions.

29. The system of claim 26 wherein simulation parameters are entered in IOS units.

30. The system of claim 29 wherein IOS units are converted by the system model to metric.

31. The system of claim 26 comprising a variable name for each simulation parameter, the system further comprising a computer aided drawing linked to each variable name.

32. The system of claim 26 wherein design parameters of each component are converted to simulation parameters by the system model.

33. The system of claim 1 wherein the system is embodied within a storage medium encoded with machine-readable computer program code.

34. A method of modeling a circuit breaker assembly, the method comprising:

representing each circuit breaker function to be modeled with a sub-model; and,

hierarchically organizing each sub-model within a system model.

35. The method of claim 34 further comprising providing the system model within a computer accessible symbol.

36. The method of claim 35 further comprising accessing the symbol to reach a selected sub-model.

37. The method of claim 34 further comprising testing the circuit breaker assembly, wherein testing the circuit breaker assembly comprises applying simulated load current through the system model.

38. The method of claim 34 further comprising varying component parameters within a sub-model.

39. The method of claim 38 further comprising updating the system model subsequent varying component parameters within a sub-model.

40. The method of claim 38 wherein varying component parameters comprises changing dimensions of a circuit breaker component.

41. The method of claim 38 wherein varying component parameters comprises altering electrical design parameters.

42. The method of claim 34 further comprising testing the circuit breaker assembly, outputting experimental data, and graphing the experimental data.

43. The method of claim 34 wherein representing each circuit breaker function to be modeled with a sub-model comprises providing a bimetal trip unit model for modeling behavior of a bimetal strip within the circuit breaker assembly.

44. The method of claim 43 further comprising arranging a bimetal heating model and a bimetal deflection model within the bimetal trip unit model.

45. The method of claim 44 further comprising accessing the bimetal heating model for generating simulated temperature rise and inputting the simulated temperature rise to the bimetal deflection model.

46. The method of claim 45 further comprising accessing the bimetal deflection model for calculating simulated force of the bimetal strip and applying the simulated force to spring rate of the bimetal strip.

47. The method of claim 43 comprising accessing the bimetal trip unit model for determining simulated temperature of the bimetal strip and calculating simulated deflection and force exerted on the bimetal strip.

48. The method of claim 43 further comprising providing a translational stop in the bimetal trip unit model for modeling a gap located between the bimetal strip and a latch of the circuit breaker assembly.

49. The method of claim 34 wherein representing each circuit breaker function to be modeled with a sub-model comprises providing a magnetic trip unit model for modeling interaction between a latch and a magnet within the circuit breaker assembly.

50. The method of claim 34 wherein representing each circuit breaker function to be modeled with a sub-model comprises providing a latch mechanism model for modeling behavior of a latch within the circuit breaker assembly.

51. The method of claim 34 wherein representing each circuit breaker function to be modeled with a sub-model comprises providing an operating mechanism model for modeling interaction between a cradle, a contact blade, and a spring coupling connecting the cradle and contact blade of the circuit breaker assembly.

52. The method of claim 51 further comprising arranging a spring coupling model within the operating mechanism model.

53. The method of claim 52 further comprising accessing the spring coupling model for determining rectangular coordinates of ends of the spring coupling.

54. The method of claim 53 further comprising accessing the spring coupling model for calculating spring torque to the cradle and contact blade.

55. The method of claim 34 wherein representing each circuit breaker function to be modeled with a sub-model comprises providing a solenoid linkage model modeling interactions between a solenoid lever and a latch lever of a circuit breaker assembly.

56. The method of claim 34 further comprising embodying the system model and sub-models within a storage medium encoded with machine-readable computer program code.

57. A storage medium encoded with machine-readable computer program code for modeling a circuit breaker assembly, the storage medium including instructions for causing a computer to implement a method comprising:

representing each circuit breaker function to be modeled with a sub-model; and,

hierarchically organizing each sub-model within a system model.

58. The storage medium of claim 57 further comprising instructions for causing a computer to implement:

providing the system model within a computer accessible symbol.

59. The storage medium of claim 58 further comprising accessing the symbol to reach a selected sub-model.

60. The storage medium of claim 57 further comprising instructions for causing a computer to implement:

testing the circuit breaker assembly, wherein testing the circuit breaker assembly comprises applying simulated load current through the system model.

61. The storage medium of claim 57 further comprising instructions for causing a computer to implement:

varying component parameters within a sub-model.

62. The storage medium of claim 61 further comprising instructions for causing a computer to implement:

updating the system model subsequent varying component parameters within a sub-model.

63. The storage medium of claim 61 further comprising instructions for causing a computer to implement:

changing dimensions of a circuit breaker component.

64. The storage medium of claim 61 further comprising instructions for causing a computer to implement:

altering electrical design parameters.

65. The storage medium of claim 57 further comprising instructions for causing a computer to implement:

testing the circuit breaker assembly, outputting experimental data, and graphing the experimental data.

66. The storage medium of claim 57 further comprising instructions for causing a computer to implement:

providing a bimetal trip unit model for modeling behavior of a bimetal strip within the circuit breaker assembly.

67. The storage medium of claim 66 further comprising instructions for causing a computer to implement:

arranging a bimetal heating model and a bimetal deflection model within the bimetal trip unit model.

68. The storage medium of claim 57 further comprising instructions for causing a computer to implement:

providing a magnetic trip unit model for modeling interaction between a latch and a magnet within the circuit breaker assembly.

69. The storage medium of claim 57 further comprising instructions for causing a computer to implement:

providing a latch mechanism model for modeling behavior of a latch within the circuit breaker assembly.

70. The storage medium of claim 57 further comprising instructions for causing a computer to implement:

providing an operating mechanism model for modeling interaction between a cradle, a contact blade, and a spring coupling connecting the cradle and contact blade of the circuit breaker assembly.

71. The storage medium of claim 70 further comprising instructions for causing a computer to implement:

arranging a spring coupling model within the operating mechanism model.

72. The storage medium of claim 57 further comprising instructions for causing a computer to implement:

providing a solenoid linkage model modeling interactions between a solenoid lever and a latch lever of a circuit breaker assembly.

73. A system for modeling a circuit breaker assembly and its components, the system comprising:

a computer generated and interactive system model, the system model comprising hierarchically arranged sub-models, each sub-model representing a different circuit breaker function; and,

simulation parameters within each sub-model, each simulation parameter representing an aspect of each component.

74. The system of claim 73 wherein design parameters of a component are converted to simulation parameters by the system model.

75. The system of claim 73 wherein a change in simulation parameters within the sub-models updates behavior of the system model.